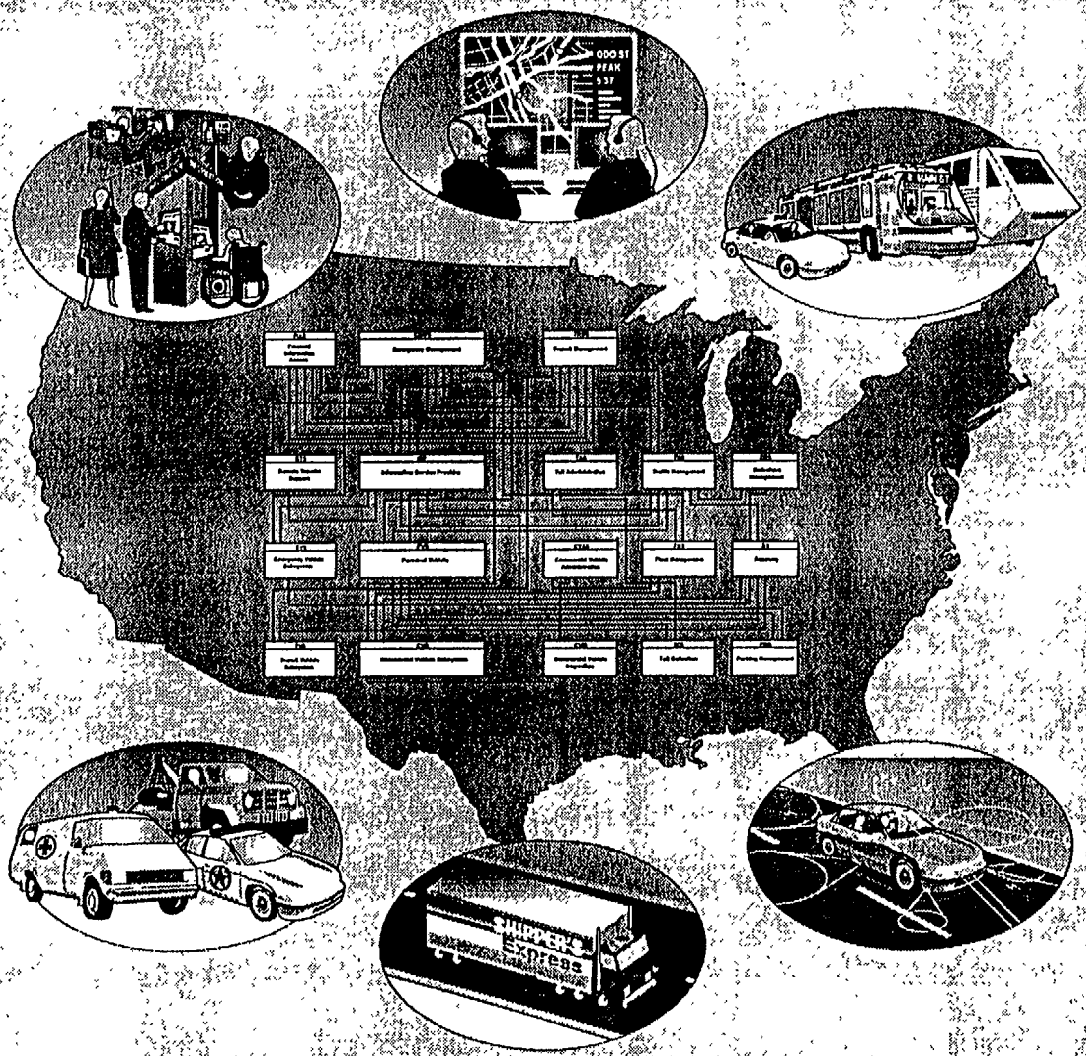
Architecture Development Team

National ITS Architecture



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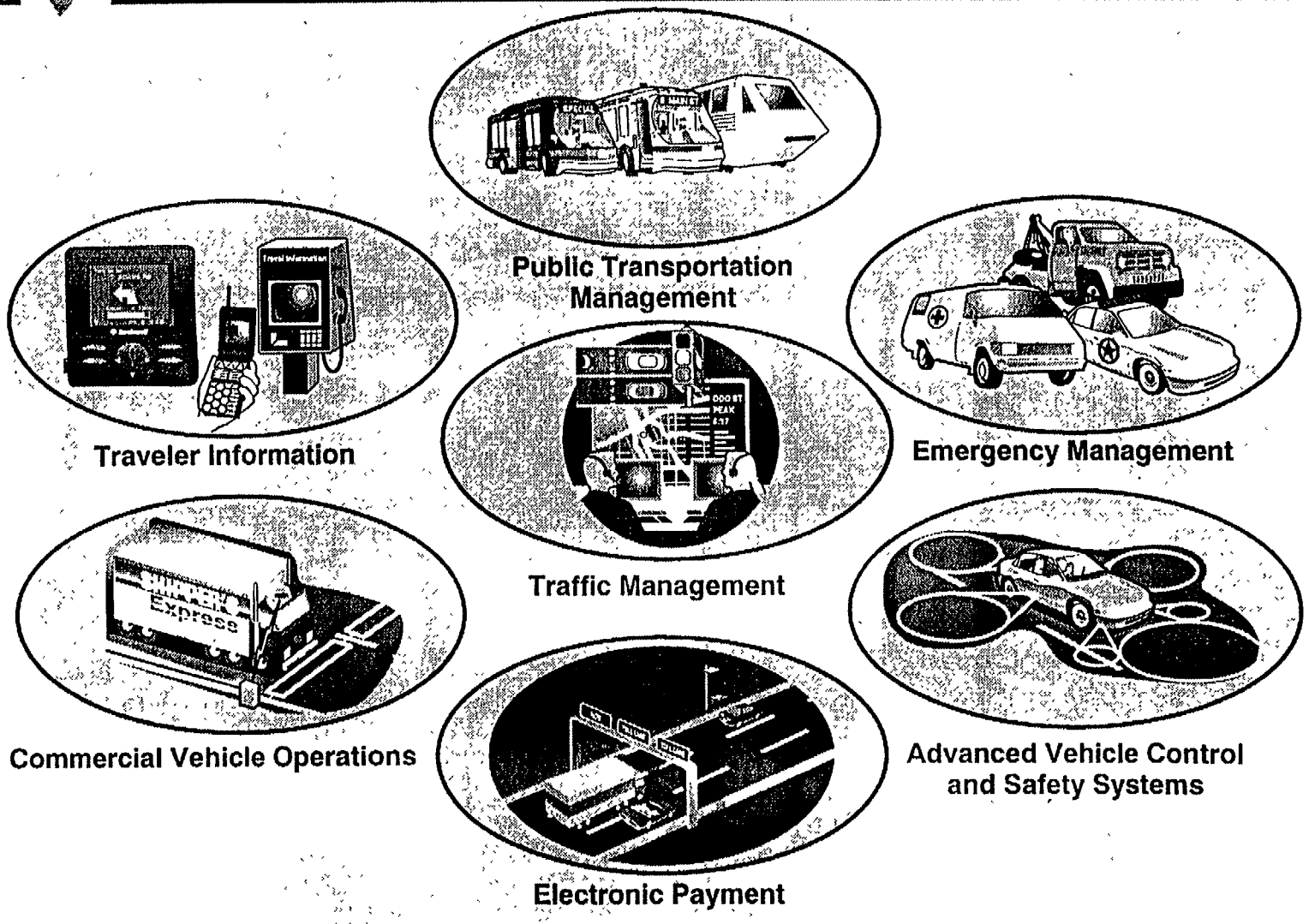
Architecture Defines Framework Required to Implement ITS User Services



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User Service Bundles

- Travel and Traffic Management
  - Pre-trip travel information
  - En-route driver information
  - Route guidance
  - Ride matching and reservation
  - Traveler services information
  - Traffic control
  - Incident management
  - Travel demand management
  - Emission testing and mitigation

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User Service Bundles (Cont)

- **Public transportation Management**
  - **Public transportation management**
  - **En-route transit information**
  - **Personalized public transit**
  - **Public travel security**
- **Electronic Payment**
  - **Electronic payment services**

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User Service Bundles (Cont)

- Commercial Vehicle Operations
  - Commercial Vehicle Electronic Clearance
  - Automated roadside safety inspection
  - On-board safety monitoring
  - Commercial vehicle administrative processes
  - Hazardous material incident response
  - Commercial fleet
- Emergency management
  - Emergency notification and personal security
  - Emergency vehicle management

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User Service Bundles (Cont)

- **Advanced Vehicle Control and Safety Systems**
  - Longitudinal collision avoidance
  - Lateral collision avoidance
  - Intersection collision avoidance
  - Vision enhancement for crash avoidance
  - Safety readiness
  - Pre-crash restraint deployment
  - Automated Highway System

Architecture Development Roadmap

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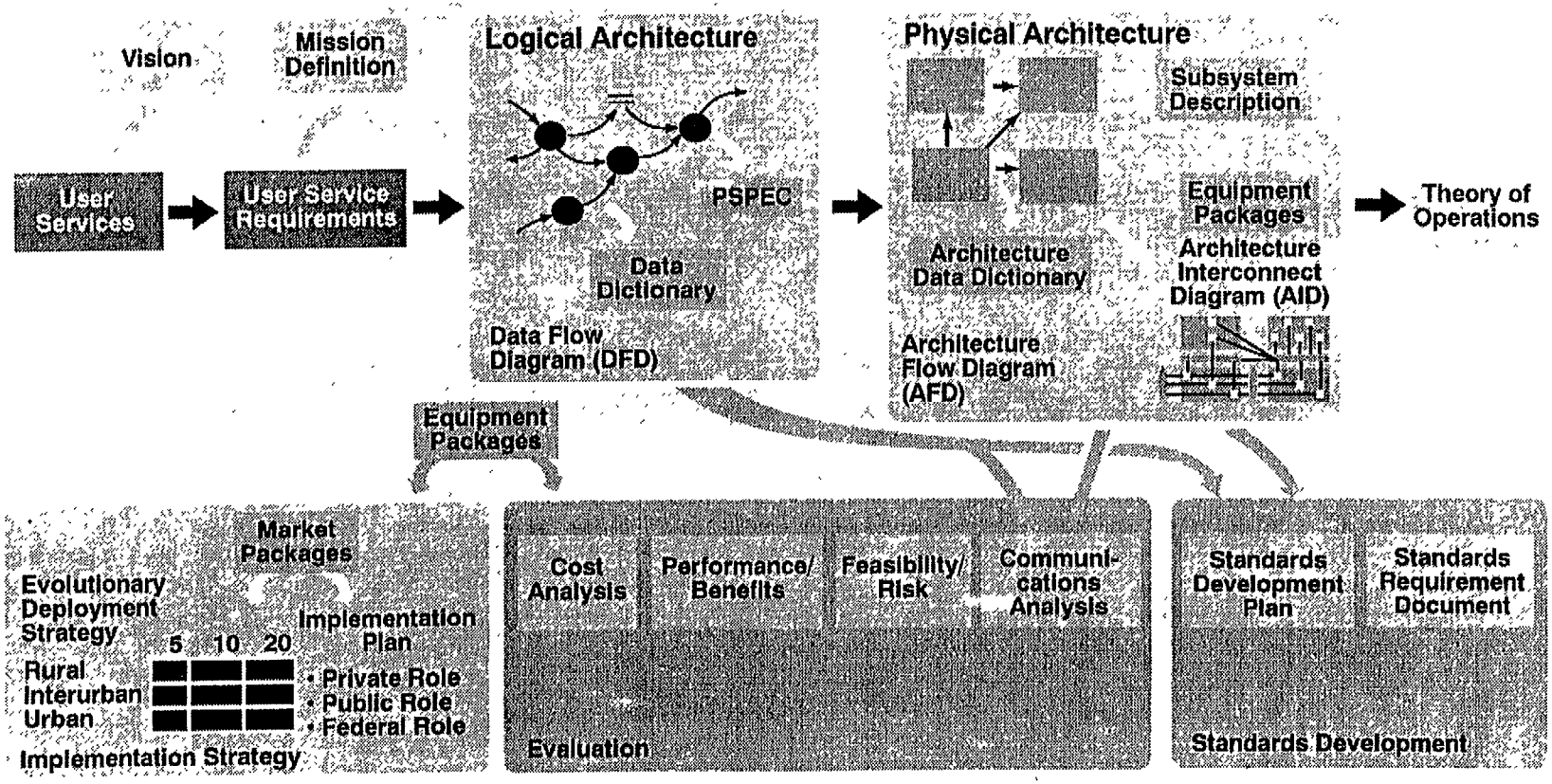

Phase II Architecture Development Process

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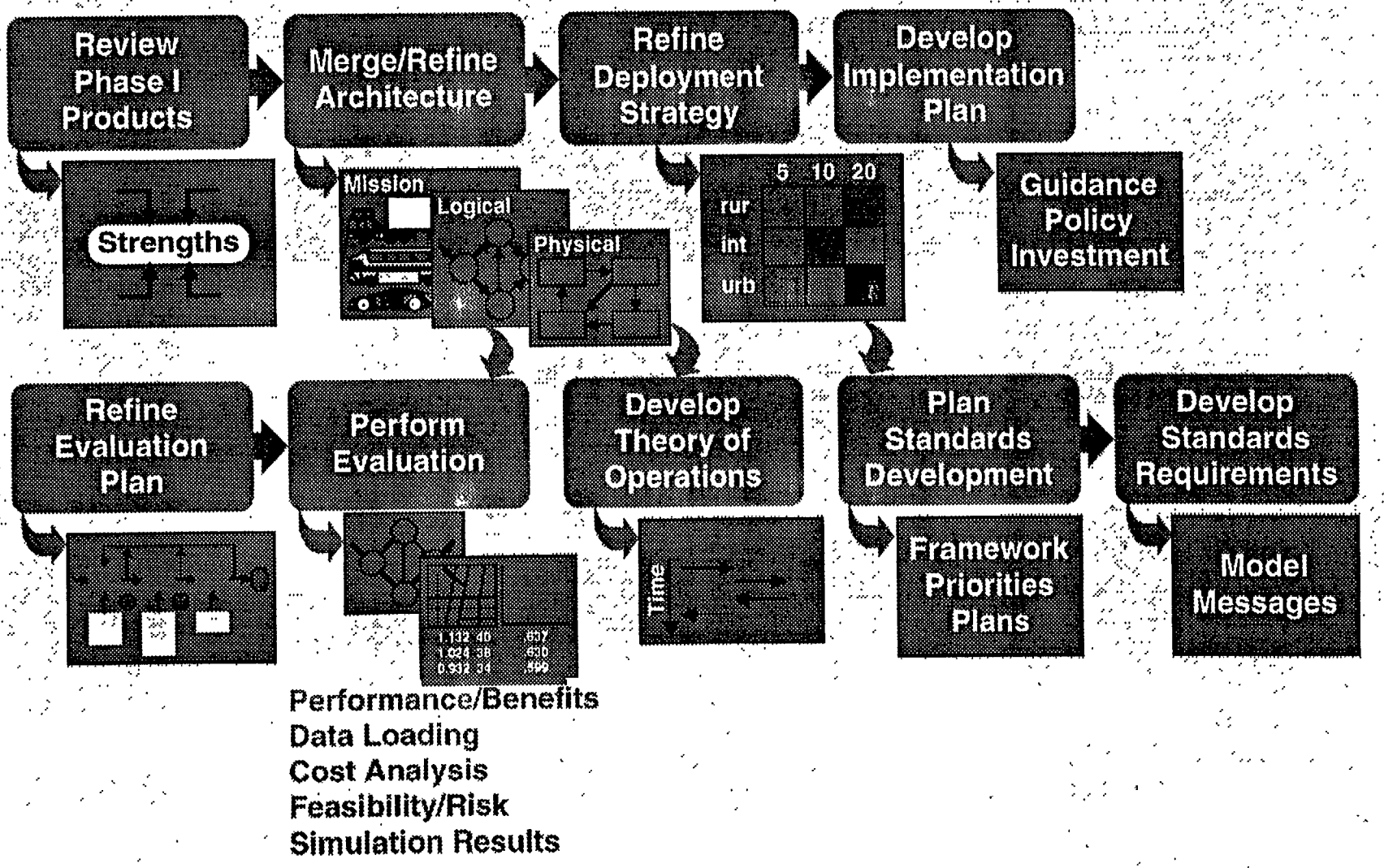

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Integration and Communications, Key to Maximizing ITS Benefits

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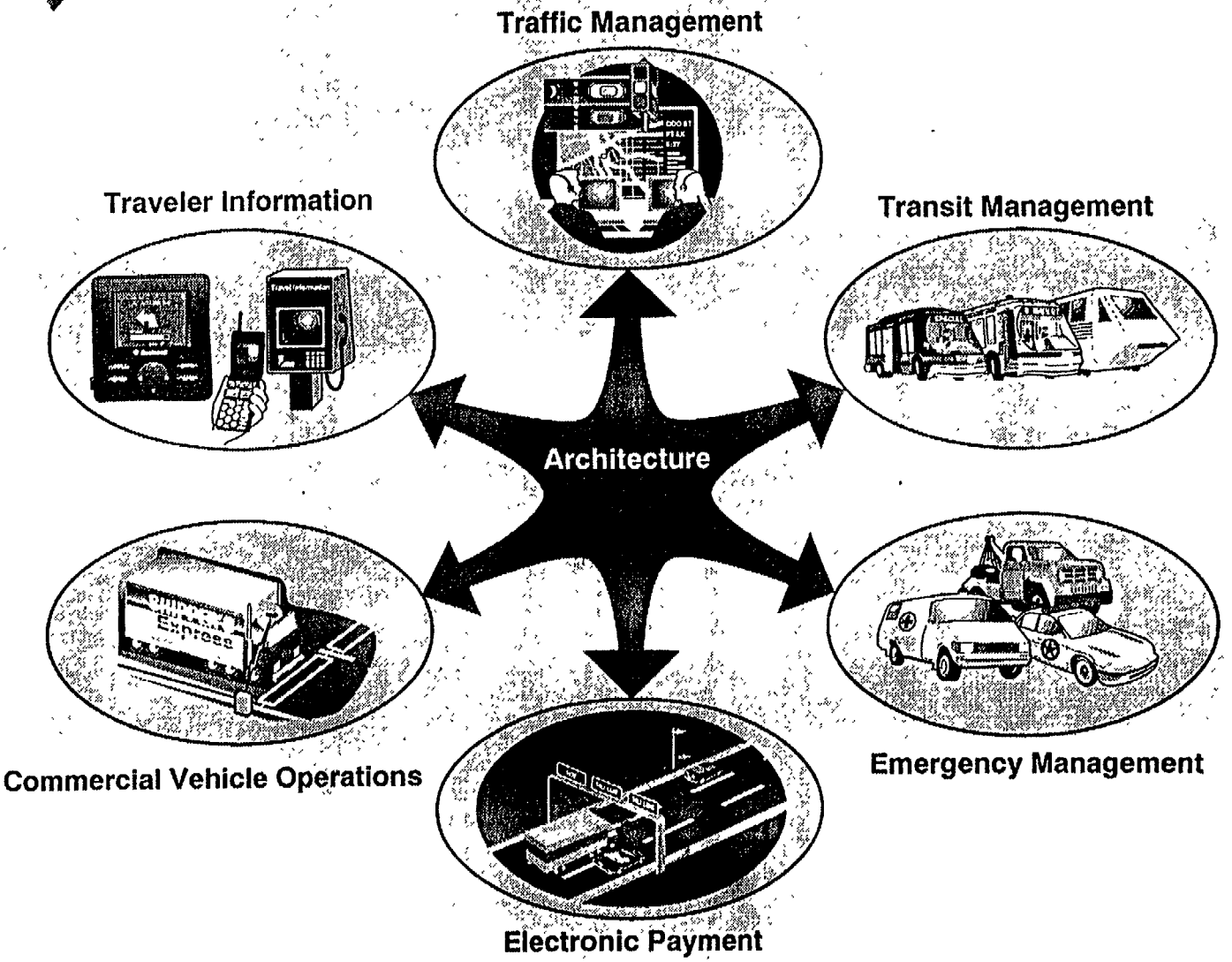

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Navigating the Architecture Documentation

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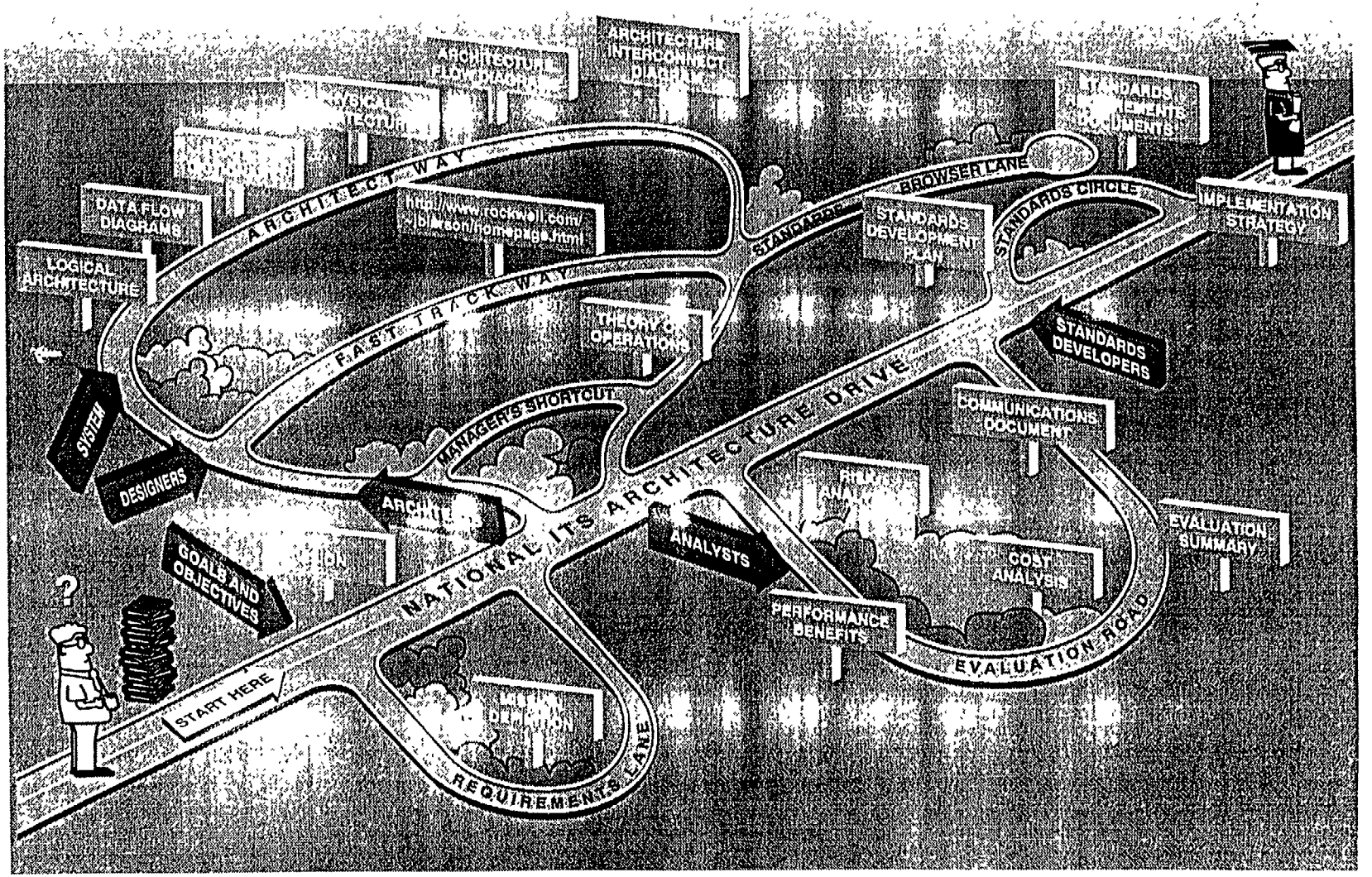

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ITS Architecture – What it Does

- Defines an open framework
- Emphasizes implementation/deployment flexibility
- Builds upon existing transportation and communications infrastructure
- Identifies and prioritizes standards for national compatibility and interoperability
- Supports data protection and individual privacy
- Does not interfere with local decision-making autonomy
- Facilitates integration of ITS elements for wide area information dissemination, monitoring and control

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. . . and What It Doesn't Do

- Prescribe a design approach
- Embed policy
- Require mandatory participation

The National ITS Architecture Process

ABSTRACT

The purpose of National ITS Architecture Development Program was to provide a framework to guide the implementation of a nationally interoperable intelligent transportation system. A national architecture was viewed as essential in achieving the goals established by Congress in ISTEA. The program was two phased and involving four architecture teams, each consisting of representatives from private industry, the public sector, and academia. Both phases included a major outreach program to gain consensus. In Phase I, each team was required to develop a national architecture which provided the full set of user services defined in the National ITS Program Plan while meeting critical ITS goals and objectives. In Phase II, two teams were selected to continue - Lockheed Martin and Rockwell International. They were to merge their two architectures and the best features of the other two teams' architectures into a single National ITS Architecture. This was completed in July 1996, 34 months after kickoff.

The architecture is divided into three layers, or areas of major activity, two of which are technical. These are the transportation layer, which focuses on integrating transportation subsystems, and the communications layer which includes four general communications methodologies to facilitate the integration. The third layer is an institutional layer which represents all public and private institutions involved in ITS.

The architecture responds to requirements derived from seven basic user service bundles - public transportation management, emergency management, advanced vehicle control and safety systems, electronic payment, commercial vehicle operations, traveler information, and traffic management - and is found in hard copy, on CD ROM, and on the World Wide Web. It focuses on different elements of the transportation community and is intended to be a continuing current reference for jurisdictions to use in integrating ITS into the mainstream of the transportation planning process.